where it flows for another 414 kilometers. In this part the Selenga is 200 to 450 meters wide and has a mean depth of 1.6 meters. The mean velocity reaches 5.6 to 8.5 kilometers per hour. Apart from a bar off the mouth, which makes entrance into the river difficult, there are no large hindrances here, and accordingly the Selenga can be designated as completely navigable in this part. Occasionally smaller steamers travel 480 kilometers into Mongolia during the high water period in the summer. The period when the river is navigable lasts exactly half a year. The water level during this period fluctuates approximately 2 meters as a mean. Regular steamer shipping /194/ has developed as far as Ust'-Kyakhta. The tributaries are traveled as needed. The largest tributaries are the Chikoy, which is more than 740 kilometers long and is navigable by ship for 249 kilometers; the Khilok, which is 742 kilometers long; and the Uda, which is 403 kilometers long. The center of water transportation is Ulan-Ude, where there is also a dockyard for steamers and barks. In connection with the Selenga there is also water transportation on Lake Baykal and on the Angara as far as Irkutsk. The total number of steamers here in 1930 was 87, and the total number of barks was 185 in contrast to only 13 steamers and 18 barks in 1912.

The importance and the capacity of water transport on the Amur exceeds that of the Selenga by several fold. The following table gives a comparison:

Water Transport 1939
in 1,000 tons

| | Total | Oil | Wood | | Grain | Mineral Construction Materials | Salt |
|---|---|---|---|---|---|---|---|
| | | | By ship | By raft | | | |
| Selenga | 200 | 7 | 7 | 91 | 45 | 14 | 1 |
| Amur | 1,305 | 191 | 11 | 645 | 186 | 65 | 13 |

## Air Transport

Air transportation was early introduced into the entire Far Eastern region to overcome the great distances. The main line coming from Moscow leads via Chita and Khabarovsk to Vladivostok. Beside the direct line, flights are made along this stretch to the following localities: Ulan-Ude, Chita, Nerchinsk, Mogocha, Skovorodino, Tygdinsk, Svobodnyy, Arkhara, Birobidzhan, Khabarovsk, Bikin, Iman, Voroshilov,

505 the entire Far Eastern coast. Nature has through winter ice barriers drawn an often very narrow limitation, in terms of time, on the usefulness of the sea route.

132 On the Sea of Japan freezing of the coast and freezing over of the rivers occurs relatively early along the Soviet Russian coast in the entire area north of 42° latitude as a consequence of the cold winds coming from the continent. The harbor of Vladivostok, however, [504] can be used all through the year. To be sure, the "Golden Horn" freezes over in the second half of December, and the ice covering remains until into the second half of March, but the ice is not so thick that a path cannot always be made by ice-breakers for the incoming and outgoing ships. Even here, however, the undisturbed ice can attain a thickness of up to one meter.

Far more unfavorable are the conditions in the Gulf of Tatar, which separates Sakhalin from the mainland. In the southern part the ice distribution and with it the accessibility of the coast depends on the prevailing winds. With persistent northwest winds the ice piles up on the western coast of Sakhalin; with east and southeast winds, on the other hand, the ice is driven toward the mainland coast. North of 51° latitude the ice covering is thicker; there the gulf is covered by a closed ice covering throughout approximately 125 days a year, and passage is free only at the beginning of May. The individual bays, however, on which the coastal towns lie, are closed over earlier and also remain shut off by ice longer. The Amur at Nikolayevsk has an ice covering for a mean of 184 days. The table appended to this chapter gives details on this.[1]

As a consequence of the northwest winds which set in already in September and especially in October, the Sea of Okhotsk comes under continental influence early. At the end of October and in the first half of November ice formation begins along the northern coast. The thickness of the ice grows until into March, persists through April, and only in May does the disintegration of the ice begin. Almost at the same time the breaking up of the ice also begins, at first at the mouths of the rivers and then along the coast. This type of breaking up fosters the destruction of the solid coastal ice, which is then further broken up by the wind and battered by the waves. As a consequence of the current the ice is driven toward the west and southwest and collects in Udskaya Bay and at the Shantar Islands in the southwestern corner of the Sea of Okhotsk. As a consequence of this the ice persists the longest in these places. Even in July large ice fields can be

[1] [cf. pp. 231-232 -- Analyst]

other hand, an elevation still appears to hold sway at present. Many rivers emptying into the sea show delta formations. 133

As a consequence of the southern current running along the coast, numerous narrow tongues of land separating small bays from the sea have formed. All these tongues of land point toward the south. The deltas mostly lie left of the river courses, which, therefore, show a wandering to the right and which also dig under the shore on the right side. The sea current is weaker and irregular on the southern coast, which is heavily broken up; thus tongues of land here can run in all directions.

The most important bay on the east coast is Ol'ga Bay. It was discovered in 1787 by La Perouse and forms one of the best natural harbors on the coast. Lying off the bay are the small, rocky Chikhachev Islands. The bay itself has a diameter of 3 kilometers and is on the mean 25 meters deep. Once it was at least three times as large and reached much more deeply into the land toward the west. Today the valley areas of the rivers emptying into the bay become swampy. When there is a strong east wind, a backward flow can even be determined. The old marine abrasion terraces are very well preserved on the mountains at a height of 25, 30, and 120 meters. The low mountains surrounding the bay consist of granite, quartz porphyry, and sedimentary rock and contain above all iron /264/ in addition to lead [135] ore containing copper and silver. This iron is magnetite with an iron content of 50 percent; the iron is being mined here. The harbor locality of Ol'ga has several thousand inhabitants. In the hinterland of the bay [261] Russian peasant settlers have made their appearance.

The Tetyuke Bay has a greater economic importance. Here, 316 35 kilometers from the coast, is the most important zinc-lead-silver 504 ore in the Far East. A narrow-gauge railroad connects the mining installations and the preparatory installations with the harbor, which has gotten modern loading equipment very recently. The harbor locality has several thousand inhabitants. Here, too, there are agricultural settlements in the hinterland.

Between the two above-mentioned bays is a third bay, the 133 Vladimir Bay. It is surrounded on all sides by granite mountains which are up to 225 meters high. The bay has a depth of up to 12 meters. Fresh water lakes and swamps enable us to recognize the former larger expanse of the bay. Two projecting rocky peninsulas enclose the bay. Vladimir is known for its installations for the extraction of iodine from seaweed.

133 361 Of the more favorable bays on the northern part of the Sikhote-Alin' coast, only the bay is still to be mentioned on which the already-mentioned harbor of Sovyetskaya Gavan' lies. The natural bay, which is suitable as a landing place, has a vast, flat hinterland, which also has a rather thick agrarian population. Since the completion of the railroad constructed from Komsomol'sk to here, the locality has developed quickly into a city with more than 20,000 inhabitants. It has also received a modern harbor. The processing of wood stands at the center of the economy, but, in addition, ship construction is also pursued. The harbor has a floating dock for ships with up to 5,000 gross registered tons.

[504] [396]

361 For the rest there are in addition numerous small Russian fishing localities on the coast. These mostly lie at the mouths of rivers, and now, through the bringing together and the building up of the fishing industry, these localities are also experiencing a certain upsurge. The supplying of the localities is done by coastal steamer. Only where wider bays and more extensive valley areas have given the opportunity, have Russian settlers also made their appearance here. These settlers have in places already penetrated 50 kilometers and more into the land.

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133 361 The real, vast mountain massif of the Sikhote-Alin' is very sparsely populated; indeed, large sections are uninhabited. In the pathless interior on the upper course of the Bikin and of the Khor, on the Mukhen, Anyu, and upper Khungari, the Tungus Orochi and Olcha are still to be encountered. They wander as nomads with their pointed tents and live exclusively from hunting and fishing. But their number becomes ever smaller. Otherwise only a few Russians and Chinese traverse the wilderness of the lonely valleys and mountains while hunting for fur-bearing animals and the antlers of Isiubr stag. The opportunities for agriculture and the breeding of livestock are slight. Only the broad bottom valleys of the main rivers are suitable for this; here, from the valley of the Ussuri on, Russian settlers are in the process of a slow penetration into the interior, especially on the Khor, Bikin, and Iman, in whose valleys /265/ they can already be found far in among the mountains. It cannot be said how much the collectivization of agriculture has contributed here to a further opening-up of the land or whether a perseverence on the land already won is the consequence of these measure.

137 Greater prospects for human activity are offered by the natural resources. Despite the careless cutting down of trees in the border

361 low ridges of the Sikhote-Alin' and enters the Muravyev-Amurskiy Peninsula and finally reaches Vladivostok, the main town and the most important harbor of the Soviet Union on the Pacific.

Vladivostok was founded in 1860. In 1872 the base of the Russian Pacific naval fleet was transferred here from Nikolayevsk on the Amur, and since then Vladivostok has been the center of the military power of the land on the Pacific. Economically, however, the city developed only slowly. In 1882 only 5,000 persons lived in the city. At the same time somewhat regular shipping between Vladivostok and the Black Sea harbors of Russia was taken up. However, the city's rise to become the economic center of the land began only after the construction of the Ussuri and Manchurian Railroad. [504] Through this railroad Vladivostok first became an important Pacific harbor, especially in transit shipping, and in this it is a harbor for all of northern Manchuria. The more recent development of the city into an industrial city has also kept pace with its development into an important harbor. In 1897 the city had a population of 21,000 [161] persons; in 1914 it was 59,000; in 1926 it was 107,980; and in 1939 it was 206,400. At present it is more than 300,000.

361 133 504 The city lies on the well protected and deep bay of the "Golden Horn" at the southern end of the Muravyev Peninsula opposite the large Russkiy Island, which is richly divided up. The peninsula and the island are separated by the "Eastern Bosporus," which extends from the Amur Bay in the west to the Ussuri Bay toward the east. The harbor is unique and one of the best natural harbors in the world, as the designations already indicate. The "Golden Horn" penetrates from the south into the Murayev Peninsula and bends then almost at a right angle toward the east (see map). /273/ /Sketch Map of Vladivostok and the Southern Coast/ 1/2 /274/ The north-south section forms the outer bay and is 3 kilometers long; the west-east section constitutes the inner, harbor bay and is 3.2 kilometers long. The width of the "Golden Horn" is 800 to 1,000 meters; the depth in the interior is 10 meters, and at the entrance of the bay it is 28 meters. Mountains surround the bay and protect it from the cold northwest and west winds. Mountains also rise 50 to 100 meters on the Shkota Peninsula, which separates the outer bay from the Amur Bay. Nevertheless, 361 504 the harbor freezes for three to four months every year, and throughout the winter three ice breakers are in uninterrupted service to keep the harbor and the entrance free of ice. The outer bay and the western part of the inner bay above all belong to the commercial harbor, while

1/2 [Cf. cat. 116, p. 317 -- Analyst]

the section farthest in of the inner bay has been built up as a naval harbor and is closed to commercial ships. Additional harbor installations lie on the "Eastern Bosporus" and on the outer side of the Shkota Peninsula. In detail the harbor houses the following installations: 361 504

1. Krestovaya Harbor: It stretches at the foot of Krestovaya Mountain, which is 94 meters high, and has quays which are 486 meters long. This harbor is used especially in the winter since it is easiest to keep the waters open here.
2. The Egersheld, which is at the same time a quarantine harbor and which has a quay almost 950 meters long. Here the most active life prevails in the summer. This harbor is specially built up for the turnover of grain, and it has the most modern loading equipment and granaries.
3. The Harbor of the "Voluntary Fleet" (Dobrovolnyi Flot). It received its name from the Organization of the "Voluntary Fleet," which was founded in 1870 and which was the first to take up the task of connecting the mother country with the Far East.
4. The Customs Pier and the so-called "Wide Mole," which takes up the northwestern angle of the Golden Horn.
5. The Commercial Pier with the "Wide Pier" (Shirokiy Pir) on the southern side of the bay. This has extensive track installations and the largest storehouses. The quay installations are 1 kilometer long.
6. The Wood Harbor, which lies somewhat farther south on Cape Churkin.
7. The Ussuri Railroad Harbor on the western side of the Shkota Peninsula. This has extensive installations for oil and petroleum.
8. The Semyonovskiy Bazar, which likewise lies on Amur Bay. It serves coastal traffic predominantly.

All the quay installations together have a total length of more than 4 kilometers, and the network of tracks, which span the harbor and all its installations, is 335 kilometers long (1937). From 1933 to 1939 there was a further building up of the harbor, and thus it is in a position to handle an annual turnover of 4 to 5 million tons. In the first period of the development of Vladivostok, the supplying of water caused some difficulties. But these have now been overcome by means of a large water storage installation on the /275/ /Sketch Map of the Harbor of Vladivostok/ /276/ so-called "Second Little River" (Vtoraya Rechka) and by means of the filtering installation, holding 100,000 tons, on the inner edge of Ulis Bay, into which Lipovyy Brook flows. 361 312

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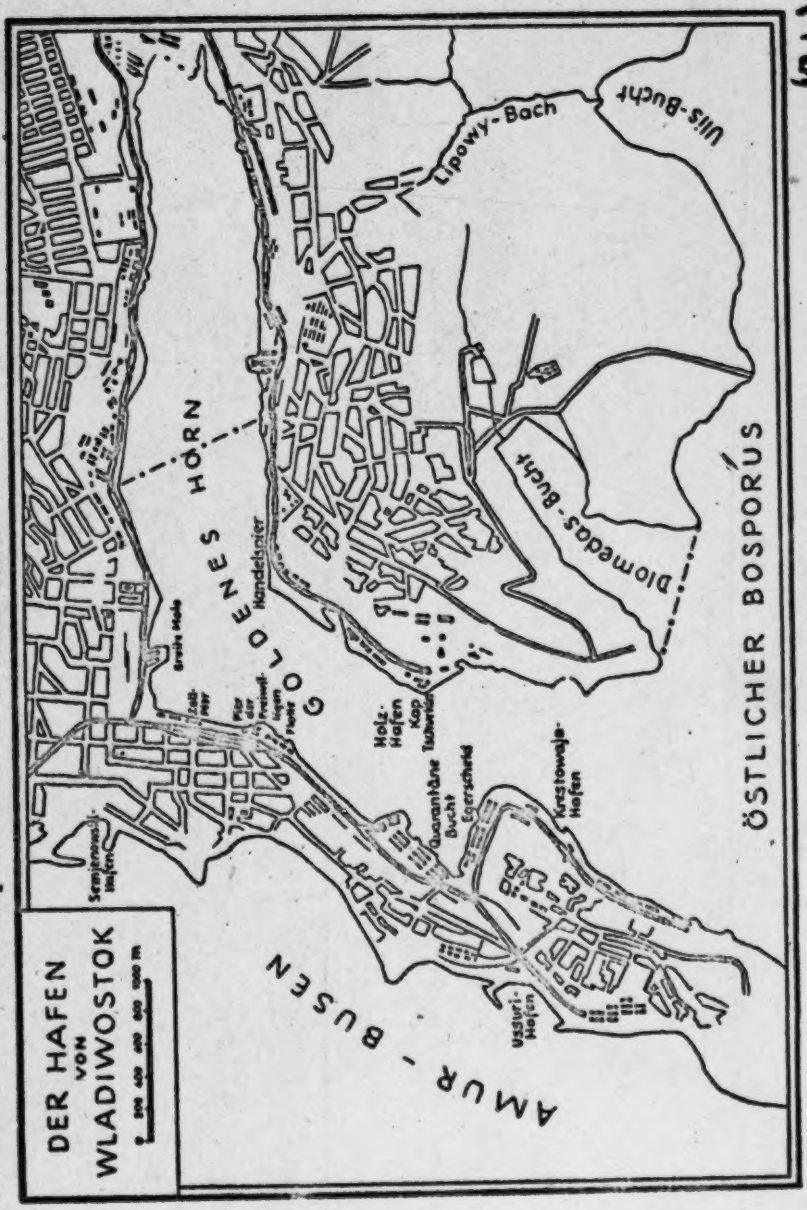


Sketch Map of the Harbor of Vladivostok

The harbor has in very recent times been expanded and provided with modern loading equipment. Since the Tatar Sound is very shallow, this equipment had to be moved very far out into the sea. To be mentioned in second place is Okha (approximately 25,000 inhabitants), the most important center of the oil region on the northeastern coast. During the last war the city got a sea harbor of its own, which is supposed to be usable throughout the entire year. South of Okha lies Ekhabi, which has often been mentioned recently for its rising oil production. A railroad and an oil pipe lead from Okha to the oil harbor of Moskal'vo, which lies on the eastern side of Baykal Bay in the northern part of the island. Furthermore, in the past few years there have been established along the coast numerous, permanently inhabited fishing bases, which give life to the entire picture along the coastal strip. The largest part of the interior is still untouched and given over even today to the native population and their primitive economy.

In southern Sakhalin (Karafuto), which was formerly Japanese, the natural landscapes continue as they have already been generally described. The western mountain range, which here has heights of up to 1,375 meters, forms the backbone and stretches to the south beyond the 46th latitude, while the eastern mountain range already ends north of the 49th /282/ latitude. The Poronay Valley ends even before that after it has spread out to a width of 30 kilometers.

As in northern Sakhalin, so here, too, the largest part of the land is covered with primeval forests, which consist of the same type of trees as in the north, only here the percentage of deciduous trees is larger and increases especially on the lower slopes and last spurs of the western mountain range. Even though the climatic conditions became somewhat milder with the southern location, tundra-like moss steppes appear here also. Reindeer breeding is still pursued today by the native population, the Orok and the Tungus.

The population of southern Sakhalin was 332,000 in 1936 and 412,000 in 1940; the increase can be traced for the most part to immigration from Japan. Of the old, native peoples scarcely 2,000 existed; of these the Ainu, who number 1,500, constitute the main part. The rest is divided among Gilyak, Orok, and other Tungus tribes.

The economic importance of southern Sakhalin lies in the wood supply of its forests, in its coal deposits, and in the wealth of fish in the waters near the coast. The Japanese have done much for the economic development of the land and also have attained much. Above all they are to be thanked for the opening up of the land through

same time created the shortest connection with the entire Kolyma region. The highway is more than 1,000 kilometers long and was built under the most difficult of conditions (mountain ranges, permafrost). Bases connected with small agricultural economies /290/ facilitates the use of the road. The harbor of Magadan lies on Nagayevo Bay. Steep rocks are artificially heaped up at the foot of the landing places for sea-going ships. Ice breakers are employed in the harbor to make it possible to use the harbor for a longer period. The rapidly growing city, which in 1939 already had more than 10,000 inhabitants and today is estimated to have 50,000 inhabitants, lies somewhat at a distance from the harbor and is separated from it by a flat, rocky hill. The construction of the city was done with the most modern means. They have even succeeded in building stable six-story skyscrapers, despite the permafrost, by using deep excavations and by laying in insulating layers.

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## The Provinces of the Extreme Northeast

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These regions are bordered on the west by the Kolyma Mountain Range, and they are divided into the Chukchi Peninsula, the Anadyr' and Penzhina region, and the Koryak Mountain Range. Of these areas only the strip along the coast is better known; the vast interior, on the other hand, is mostly still insufficiently explored.

The Chukchi Peninsula is cut off from the Asiatic continent on the one side by Chaun Bay on the Arctic Ocean and on the other side by Anadyr' Bay on the Bering Sea. The southern border is formed by the Anadyr' Mountain Range, which represents the watershed between the Arctic Ocean rivers and the Anadyr', and which is more than 1,000 meters high. The region north of the Anadyr' Mountain Range is also filled with lines of mountain ranges almost as far as the coast of the Arctic Ocean. These mountain ranges stretch in a direction from west to east. Further toward the east the contiguous, broad mountain landscape is lost, and the mountain ranges form themselves into two ridges which lie under 800 meters and which, broken through several times by rivers, reach the east coast with the northern mountain range going in the direction of Cape Dezhnev. The cape itself, which lies 77 kilometers from the mainland of Alaska, consists of a single, massive mountain which is 770 meters high and which is formed from limestone. This mountain is completely isolated and is connected with the mainland only by a low, narrow tongue of land, which is

world. The crabs are extraordinarily large and attain lengths of half a meter and more. They are drawn up from the bottom of the sea in drag nets in which they get entangled. Worthy of mention in this connection are the floating crab canning factories, which are used on the west coast and which carry out on board all the work from catching to canning.

The capital of the peninsula is Petropavlovsk. The city lies on Avacha Bay, which freezes over only exceptionally. The bay is surrounded in a semi-circle by the panorama of high volcanos. The city's favorable natural harbor, which a short while ago got a ship-yard with a dock for ships of up to 5,000 gross registered tons, gains more and more in importance since the ships of the Northern Sea Route spend the winter here before they start out on their trip to the north. This applies especially to ships which regularly travel to the Kolyma River in order to ensure supplies of heavy materials to the gold regions on the upper course of the Kolyma. Petropavlovsk is the center of the hunting of sea animals and of the industries connected with this. In addition, the city also has fish processing installations, a brickyard, saw mills, and a can factory, which is of especial importance since it supplies the necessary material to all the smaller fish processing localities. In the treeless delta of the Kamchatka River lies Ust'-Kamchatsk, the next most important locality on the peninsula. More than 2,000 workers /302/ work in the canning factories there in the summer. The locality, in addition, has a special importance as the gateway to the interior of the peninsula, which can be reached easily only through the Kamchatka valley, while the other approaches have to overcome difficult passes. In increasing measure also wood is floated down the Kamchatka River to the coast, where it is processed in and sent on from Ust'-Kamchatka. In the broad longitudinal valley of the Kamchatka there are a series of villages, among which Verkhne Kamchatsk and Mil'kovo should be mentioned. In this area removed from the coast, horses are kept, since supplying fish food for dogs causes difficulties. At the inner entrance to the cross valley, at the foot of the largest volcano cone, lies the village of Klyuchi, from which the volcano receives its name. Here the traffic lines from the interior merge and make the locality into a central trading place, especially for fur goods. In addition to Russians and Koryak, some Chinese and Koreans have also settled here. Klyuchi has a scientific observatory for the study and special observation of the Klyuchevskaya Sopka. Below the village the Kamchatka widens into a sea decorated with islands.